

EXHIBIT 132

REDACTED

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA**

UNITED STATES OF AMERICA, ET AL.,

Plaintiffs,

v.

GOOGLE LLC,

Defendant.

Civil Action No.: 1:23-cv-0108 (LMB/JFA)

EXPERT REPORT OF PAUL R. MILGROM

DATE: January 23, 2024

**HIGHLY CONFIDENTIAL
SUBJECT TO PROTECTIVE ORDER**

through the OpenX Exchange experienced an average 48% increase in programmatic revenue from OpenX.”⁷⁶⁴

3. Google’s Transition to the Unified First Price Auction Further Increased Efficiency

428. Despite its history of using second-price auctions, Google transitioned to a Unified First Price Auction in 2019.⁷⁶⁵ Under the UFPA, all bidders—including AdX bidders, header bidders, and non-Google exchanges using Open Bidding—competed on the same first-price basis, with the highest bidder paying its bid.⁷⁶⁶ This change eliminated the inefficiencies and confusions caused by differences in auction formats, and removed the so-called “last look” over header bidding. It reduced transaction costs both for bidders, who no longer needed to bid differently in different exchanges, and publishers, who no longer needed to inflate header bids to set value CPMs for a second-price auction.

429. To enable Google’s advertiser customers to bid their true values, Google Ads and DV360 introduced new programs to optimize their bids into the Unified First Price Auction. As discussed in [Section IV.C.1.c](#), Alchemist optimized bids into the UFPA for Google Ads advertisers, while using threshold pricing to determine payments by advertisers.⁷⁶⁷ The threshold prices made the combined Google Ads internal auction and AdX auction

⁷⁶⁴ OpenX, “Google & OpenX Release Study Showing Publisher Partners Experience 48% Revenue Lift Through Google Exchange Bidding Collaboration” (Feb. 15, 2018), <https://www.openx.com/press-releases/google-openx-revenue-lift/>.

⁷⁶⁵ Comms Doc, “Ad Manager Unified 1st Price Auction” (Sep. 27, 2019), GOOG-DOJ-09714662, at -662 (“[W]e are transitioning publisher inventory to a unified, 1st price auction for Google Ad Manager.”).

⁷⁶⁶ Comms Doc, “Ad Manager Unified 1st Price Auction” (Sep. 27, 2019), GOOG-DOJ-09714662, at -663 (“After the transition is complete, all publisher traffic is on 1st auction”).

⁷⁶⁷ Recall that this means that a Google Ads advertiser [REDACTED]. See Design Doc, “The Alchemist (AKA First Price Bernanke)” (Mar. 2019), GOOG-DOJ-14550102 at -103-104 (providing details on how the payment is calculated); Declaration of N. Jayaram (Aug. 05, 2023), GOOG-AT-MDL-008842383, at ¶ 22.

3. Plaintiffs’ Experts Downplay the Benefits of Simultaneously Introducing UPR with the UFPA

459. Plaintiffs’ experts characterize Google’s introduction of UFPA simultaneously with the

UPR as an attempt to placate publishers, with Dr. Abrantes-Metz, for example, writing:

[REDACTED]

[REDACTED]

[REDACTED]⁸²¹ But transitioning to UPR while running

sequential auction formats (as before the UFPA) could have harmed publisher revenues in ways that were not possible after transition to the UFPA.

460. Setting exchange-discriminatory floor prices could help publishers maximize revenues in a system where the winning bids from multiple exchanges were evaluated sequentially.

For example, consider a publisher that sequentially calls two exchanges in the waterfall:

it calls Exchange A before Exchange B. Suppose that the publisher believes that the

distribution of advertiser values at both exchanges are identical and that the value of

bidders at each exchange are statistically independent of the values of bidders at the other

exchange.⁸²² Then the publisher’s revenue-maximizing floor price for Exchange A is

higher than that for Exchange B.⁸²³ This is because, by choosing a higher floor price for

Exchange A, the publisher can extract higher revenues, knowing that it can offer the

impression to Exchange B if it fails to sell on Exchange A. The same comparison of floor

⁸²¹ Expert Report of R. Abrantes-Metz (Dec. 22, 2023), at ¶ 400.

⁸²² That is, knowing the value of a bidder at Exchange A does not change the publisher’s beliefs about the values of bidders at Exchange B, and vice versa. This is the “independent private values” class of auction models that Plaintiffs’ experts use.

⁸²³ To illustrate, suppose that each exchange has two bidders whose values are drawn independently and uniformly between \$0.00 and \$1.00. Then the optimal floor price for Exchange A is \$0.71 while that for Exchange B is \$0.50. In a Unified First Price Auction, the optimal floor price for both exchanges is \$0.50.